

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Previously Presented): An aircraft comprising:

a wing forming a vortex at a rear portion thereof by a merging of a first co-rotating eddy with a second co-rotating eddy; and

a perturbation device disposed adjacent an area of creation of the first co-rotating eddy, the perturbation device being configured to generate a periodic perturbation having a wavelength configured to excite at least one instability mode of the first co-rotating eddy to accelerate a destruction of the vortex.

Claim 2 (Currently Amended): The aircraft apparatus according to claim 1, wherein the perturbation device is disposed adjacent a flap of the aircraft.

Claim 3 (Withdrawn-Currently Amended): The aircraft apparatus according to claim 2, wherein the perturbation device comprises an unstreamlined element.

Claim 4 (Withdrawn-Currently Amended): The aircraft apparatus according to claim 3, wherein the unstreamlined element comprises a cylindrical section.

Claim 5 (Withdrawn-Currently Amended): The aircraft apparatus according to claim 4, wherein the unstreamlined element comprises a circular cross section.

Claim 6 (Withdrawn-Currently Amended): The aircraft apparatus according to claim 4, wherein the unstreamlined element comprises an elliptical cross section.

Claim 7 (Withdrawn-Currently Amended): The aircraft apparatus according to claim 3, wherein the unstreamlined element is configured to be extended from and retracted into one of the wing and the flap of the aircraft.

Claim 8 (Currently Amended): The aircraft apparatus according to claim 2, wherein the perturbation device comprises a fluid jet.

Claim 9 (Currently Amended): The aircraft apparatus according to claim 8, wherein the fluid jet is disposed within one of the wing and the flap of the aircraft.

Claim 10 (Previously Presented): An aircraft comprising:
a wing forming a vortex at a rear portion thereof by a merging of a first co-rotating eddy with a second co-rotating eddy; and
means for generating a periodic perturbation having a wavelength configured to excite at least one instability mode of the first co-rotating eddy, the means for generating being disposed adjacent an area of creation of the first co-rotating eddy.

Claim 11 (Currently Amended): The aircraft apparatus according to claim 10, wherein the means for generating is disposed adjacent a flap of the aircraft.

Claim 12 (Withdrawn-Currently Amended): The aircraft apparatus according to claim 11, wherein the means for generating comprises an unstreamlined element.

Claim 13 (Withdrawn-Currently Amended): The aircraft apparatus according to claim 12, wherein the unstreamlined element is configured to be extended from and retracted into one of the wing and the flap of the aircraft.

Claim 14 (Currently Amended): The aircraft apparatus according to claim 11, wherein the means for generating comprises a fluid jet.

Claim 15 (Currently Amended): The aircraft apparatus according to claim 14, wherein the fluid jet is disposed within one of the wing and the flap of the aircraft.

Claim 16 (Previously Presented): An aircraft comprising:
a first wing forming a first contra-rotating vortex at a rear portion thereof by a merging of a first co-rotating eddy with a second co-rotating eddy;
a second wing forming a second contra-rotating vortex at a rear portion thereof by a merging of a third co-rotating eddy with a fourth co-rotating eddy;
a first perturbation device disposed adjacent an end of a first flap of the first wing; and
a second perturbation device disposed adjacent an end of a second flap of the second wing, wherein

the first and second perturbation devices are configured to generate periodic perturbations having wavelengths configured to excite instability modes of the first and third co-rotating eddies, and

diameters of the first and second contra-rotating vortices with excited instability modes are greater than a predetermined proportion of a distance between the first and second contra-rotating vortices.

Claim 17 (Currently Amended): The aircraft apparatus according to claim 16, wherein the predetermined proportion is approximately 30%.

Claim 18 (Currently Amended): The aircraft apparatus according to claim 1, wherein the periodic perturbation is a Benard-von Karman instability.

Claim 19 (Currently Amended): The aircraft apparatus according to claim 1, wherein the periodic perturbation induces an increase in three-dimensional elliptic instabilities.

Claim 20 (Currently Amended): The aircraft apparatus according to claim 1, wherein the instability mode is an internal instability mode of a core of the first co-rotating eddy.

Claim 21 (Withdrawn-Currently Amended): The aircraft apparatus according to claim 2, wherein the perturbation device has a diameter transverse with respect to a flow around the wing of the aircraft and the diameter depends on the wavelength of the periodic perturbation.

Claim 22 (Withdrawn-Currently Amended): The aircraft apparatus according to claim 3, wherein the unstreamlined element has a diameter transverse with respect to a flow around the wing of the aircraft and the diameter depends on the wavelength of the periodic perturbation.

Claim 23 (Currently Amended): The aircraft apparatus according to claim 9, wherein the fluid jet emits a fluid transversally to a flow around the wing of the aircraft and thus to a longitudinal axis of the first co-rotating eddy.

Claim 24 (Currently Amended): The aircraft apparatus according to claim 10, wherein the periodic perturbation is a Benard-von Karman instability.

Claim 25 (Currently Amended): The aircraft apparatus according to claim 10, wherein the periodic perturbation induces an increase in three-dimensional elliptic instabilities.

Claim 26 (Currently Amended): The aircraft apparatus according to claim 14, wherein the fluid jet emits a fluid transversally to a flow around the wing of the aircraft and thus to a longitudinal axis of the first co-rotating eddy.

Claim 27 (Currently Amended): The aircraft apparatus according to claim 16, wherein the periodic perturbations are Benard-von Karman instabilities.

Claim 28 (Currently Amended): The aircraft apparatus according to claim 16, wherein the periodic perturbations induce increases in core diameters of the co-rotating eddies.

Claim 29 (Currently Amended): The aircraft apparatus according to claim 16, wherein the periodic perturbations induce increases in three-dimensional elliptic instabilities.

Claim 30 (Currently Amended): The aircraft apparatus according to claim 16, wherein the instability mode to be excited is determined from sizes of cores of the eddies and ratios between the sizes of the cores of the eddies and a distance between the eddies.

Claim 31 (New): The aircraft according to claim 1, wherein the perturbation device is disposed completely within one of the wing and the flap of the aircraft.

Claim 32 (New): The aircraft according to claim 1, wherein the perturbation device is configured to eject a fluid through an aperture in one of the wing and the flap.

Claim 33 (New): The aircraft according to claim 1, wherein the perturbation device is configured to eject a fluid at a velocity equal to or greater than a velocity of the aircraft.

Claim 34 (New): The aircraft according to claim 10, wherein the means for generating is disposed completely within one of the wing and the flap of the aircraft.

Claim 35 (New): The aircraft according to claim 10, wherein the means for generating is configured to eject a fluid through an aperture in one of the wing and the flap.

Claim 36 (New): The aircraft according to claim 10, wherein the means for generating is configured to eject a fluid at a velocity equal to or greater than a velocity of the aircraft.